basic imagery interpretation report

Perm Rocket Engine Test Facility (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

25X1

USSR

INSTALLATION OR ACTIVITY NAME					COUNTRY
Perm Rocket Engine Test Facility					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	58-00-55N 056-34-10E				
MAP REFERENCE					
ACIC. USATC, Series 200, Sheet 0156-11, scale 1:200,000					
LATEST IMAGERY USED		NEGATION DATE (If required)			
		NA			

ABSTRACT

1. (S/D) This report describes recent developments at the Perm Rocket Engine Test Facility. It updates part of a previous NPIC report, and is based on all relevant imagery acquired through the information cutoff date of

2. (S/D) The Perm Rocket Engine Test Facility is a Soviet acceptance test facility for rocket engines. Evidence of five tests was identified during the reporting period. Additional activity included the refurbishment of the diffuser for test stand two and the replacement of a run tank for test stand one.

3. (S) This report includes a location map, an annotated photograph, and one table.

INTRODUCTION

4. (S/D) The Perm Rocket Engine Test Facility (RETF) is in an isolated area approximately 18 kilometers east of Perm (Figure 1). Perm RETF is road and rail served and secured by a fence and a wall.

5.

BASIC DESCRIPTION

6. (TSR) The Perm RETF comprises approximately 80 structures with a total floorspace of 53,000 square meters (Table 1), excluding the two test stands and steamplant. Both test stands are equipped with diffusers and are capable of altitude simulation. Other important elements of the facility include: two pre-/posttest checkout buildings, fuel and oxidizer storage areas, a probable propellant laboratory, a probable propellant test/checkout building, an air liquefaction plant, an electrical power substation, and a steamplant.

7. (TSR) Only minor construction activity occurred at Perm RETF during the reporting period, March 1976 through April 1980. There were no apparent modifications to the main structure of either test stand. However, the diffuser for test stand two was refurbished, and a run tank for test stand one was replaced. On the diffuser for test stand two (item 19, Figure 2) was being disassembled. It was completely dismantled by The diffuser had been reassembled when the facility was next observed on There was no change in either the length or the diameter of the diffuser. A run tank, for test stand one (item 4) had been moved from its foundation between This tank had been in position since at least 1966. On a run tank (item 2) had replaced the original one. In the fuel storage area two tanks were connected to the ten existing, unenclosed tanks. As many as five individual tanks were also in this area, but it could not be determined if the tanks were replacements for, or additions to, the tanks in the fuel storage building (item 13).

8. (TSR) These observed activities may have been to accommodate a change in the type of engines tested at the facility. However, construction related activity is not always indicative of a change in test programs. It is not unusual for a diffuser to be refurbished or for a 14 year old tank to be replaced.

9. (TSR) The overall level of test activity at Perm RETF is undetermined. No significant construction activity or indications of test preparation were observed during the reporting period. Evidence of engine testing, snow melt/blast mark, was identified at test stand one on five occasions: there was no evidence of a test. But on the next available coverage, snow melt on the blast apron indicated a

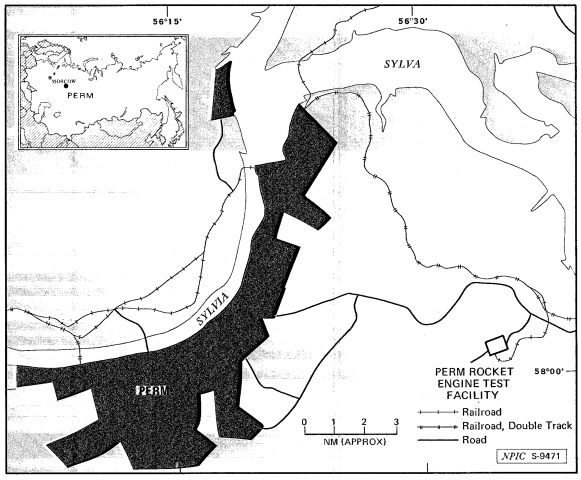

FIGURE 1. LOCATION OF PERM ROCKET ENGINE TEST FACILITY

test had occurred. On there was no evidence of a test, but snow melt observed on the next coverage, indicated a test had occurred. Snow melt was also identified on the following coverage of Meteorological reports[9] indicated that between more than two inches of snow had fallen, suggesting that the snow melt on was the result of another test. A ring with an outer diameter of an inner diameter of and a height of was adjacent to the blast apron of test stand one on Snow melt resulting from engine testing was identified on imagery of Two feet of snow had fallen between these dates, thus confirming separate tests.

10 (TSR) From 1965 to the present, all engine tests identified through imagery occurred during the winter season. The propellants of the engines being tested do not leave a visible residue on the blast apron when burned. Therefore the only posttest evidence has been melted snow on the blast apron. The lack of pre- and posttest evidence has prevented the level of test activity from being accurately determined.

Imagery Analyst's Comments

Table 1.
Buildings and Structures at Perm RETF
This table in its entirety is classified TOP SECRET RUFF

Item	Function/Description	Dimensions (m) L	W	H	Floorspace (sq m)	Remarks
1	Tank storage shed	54	19	4	1,026	
2	Run tank	12	3 (diam)		—	
3	Support	21	6	6	126	
4	Test stand 1	—	—	—	—	
5	Control	23	16	11	736	2 stories
6	Support	5	4	4	20	
7	Oxidizer storage				2,178	
a	Section	66	25	7	(1,650)	
b	Section	66	8	4	(528)	
8	Oxidizer offloading	31	7	9	217	
9	Support	9	6	4	54	
10	Support	12	7	5	84	
11	Pumphouse	13	Irreg	5	151	
12	Pumphouse	19	14	5	266	
13	Oxidizer storage	41	17	7	697	
14	Support	12	6	4	72	
15	Support	9	6	4	54	
16	Support	18	15	4	270	
17	Support	36	21	9	1,512	2 stories
18	Control	39	14	11	546	
19	Test stand 2	—	—	—	—	
20	Compressor	19	7	4	133	
21	Support	18	7	5	126	
22	Support	6	4	4	24	
23	Support	33	10	8	330	
24	Prob propellant test/ checkout				7,228	
a	Low bay	133	15	9	(1,995)	Numerous stacks on low-bay section
b	High bay	133	25	19	(3,325)	
c	Low bay	133	12	9	(1,596)	
d	Covered crane	24	13	13	(312)	
25	Support	40	14	6	560	
26	Support	54	17	6	918	
27	Support	49	14	6	686	
28	Propellant vehicle garage	43	20	6	860	
29	Support	12	6	5	72	
30	Poss components test	43	25	12	2,150	2 stories
31	Prob propellant lab	31	19	16	1,178	2 stories, white residue continually observed on roof
32	Pumphouse	12	9	—	108	
33	Pre-/posttest checkout	60	36	14	2,160	
34	Admin/engr	40	13	11	1,560	3 stories
35	Fuel offloading	12	6		72	
36	Fuel offloading	12	9	6	108	
37	Steamplant		Irreg		—	
38	Water tower	6 (diam)		28	—	
39	Pre-/posttest checkout				7,967	
a	Admin/engr	72	13	13	(3,744)	4 stories
b	Assembly/checkout	72	48	13	(3,456)	
c	Admin/engr	25	13	7	(650)	2 stories
d	Assembly/checkout	13	9	6	(117)	
40	Support	—	6	—	—	
41	Air liquefaction				3,047	
a	Section	73	26	15	(1,896)	
b	Section	25	23	8	(575)	
c	Section	31	16	8	(496)	
d	Section	15	6	—	(80)	
42	Gasometer	12 (diam)		—	—	
43	Gasometer	12 (diam)		—	—	
44	Blower house	37	13	11	481	
45	Support	9	2	3	18	
46	Support	16	7	3	112	
47	Support	12	10	3	120	
48	Shipping/receiving				612	
a	High bay	36	10	—	(360)	
b	Low bay	36	7	—	(252)	
49	Shipping/receiving				960	
a	High bay	30	13	11	(390)	
b	Low bay	30	19	7	(570)	
50	Warehouse	25	13	5	325	
51	Control/switching	40	6	5	240	
52	Utility	7	7	6	49	
53	Support	34	10	5	340	
54	Support	13	7	4	91	
55	Support		Irreg		766	
56	Support	9	5	1	45	
57	Fire station	13	10	6	130	
58	Admin/engr	26	19	9	988	2 stories
59	Admin/engr	49	13	10	1,274	2 stories
60	Vehicle maint	74	Irreg		1,406	
61	Vehicle maint	18	7	3	126	
62	Storage	12	7	3	84	
63	Vehicle maint	19	7	4	133	
64	Vehicle maint	13	7	4	91	
65	Storage	14	3	3	42	
66	Support	44	13	9	1,144	2 stories
67	Warehouse	22	9	5	198	
68	Warehouse	62	Irreg		1,376	2 stories
69	Support	23	4	4	92	
70	Warehouse	25	12	4	300	
71	Admin	36	14	4	504	
72	Admin	13	12	7	312	2 stories
73	Support	6	4	3	24	
74	Support	49	19	9	1,862	2 stories
75	Storage	36	5	4	180	
76	Support	25	14	7	700	2 stories
77	Support	14	Irreg		105	
78	Storage	12	6	3	72	
79	Waste treatment	46	Irreg		402	
Total floorspace					53,000	

*Numbers in parentheses are the amount of floorspace within the individual section of the structure.

[redacted] 25X1

14. (TSR) The rocket engines associated with Perm RETF and the frequency with which they are being tested have not been confirmed. However, the absence of significant construction or unusual test activity suggests that no significant changes have occurred at Perm RETF during the reporting period.

REFERENCES

IMAGERY

(TSR) All available KEYHOLE imagery acquired between [redacted] and the information cutoff date, [redacted] was used in the preparation of this report. 25X1 25X1

MAPS OR CHARTS

ACIC, US Air Target Chart, Series 200, Sheet M0156-11 HL, 7th ed, Jan 72, scale 1:200,000 (SECRET/[redacted] 25X1 25X1

DOCUMENTS

1. DoD, IIR 2 218 8386 75, *Perm Global Rocket Production*, 17 Nov 75 (CONFIDENTIAL/[redacted] 25X1 25X1
2. DoD, IIR 2 219 0063 75, *Perm Global Rocket Production, Key Personnel*, 16 Dec 75 (CONFIDENTIAL)
3. NPIC, [redacted] RCA-09/0023/76, *Activity and Developments at Selected Soviet Rocket Engine Test Facilities*, May 76 (TOP SECRET [redacted] 25X1 25X1
4. DIA, [redacted] DST-1010S-366-79-SAO Sup 1, *SS-19 ICBM System (U), Supplement 1*, Nov 79 (TOP SECRET [redacted] 25X1 25X1
5. DIA, [redacted] SAO/ST-SS-10-305-75, *SS-X-17 ICBM System (U)*, Jan 75 (TOP SECRET [redacted] 25X1 25X1
6. DIA, [redacted] DST-1850S-007-79-SAO, *Rocket Propulsion Development and Test Programs and Facilities—ECC (U)*, Nov 79 (TOP SECRET [redacted] 25X1 25X1
7. DIA, [redacted] SAO/ST-SS-16-13-72, *Soviet Space Launch Systems (U)*, Nov 71 (TOP SECRET [redacted] 25X1 25X1
8. DIA, [redacted] SAO/ST-SS-04-7-70, *Rocket Propulsion Development and Test Facilities-USSR and Communist China (U)*, Jan 70 (TOP SECRET [redacted] 25X1 25X1
9. United Scientific Research Institute for Hydrometeorological Information, Center for World Statistics. *Meteorological Monthly, USSR;* Part 1, Daily Data; Nov 77, Dec 77 (UNCLASSIFIED)

RELATED DOCUMENT

CIA, [redacted] STIR WI 76-10014J, *Soviet Organizations that Design, Develop, and Produce Liquid-Propellant Rocket Engines*, Aug 76 (TOP SECRET [redacted] 25X1 25X1

REQUIREMENT

COMIREX J02
Project 200015DJ

(S) Comments or questions regarding this report are welcome. They may be directed to [redacted] Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1